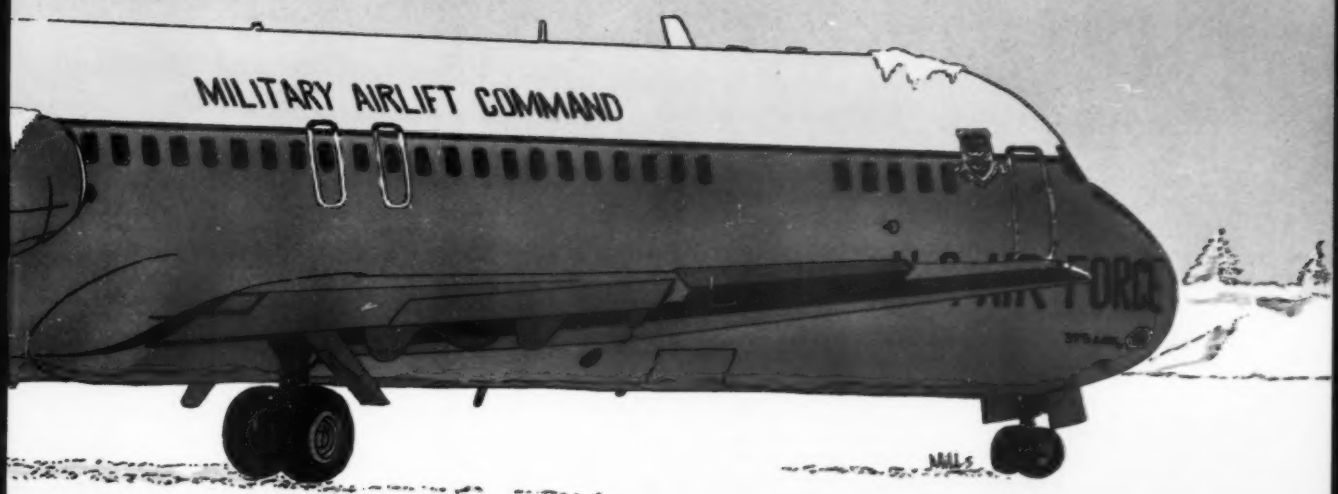
The MAC Flyer

DECEMBER 1972



MILITARY AIRLIFT COMMAND
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For Greater Efficiency
in MAC Air Operations

The MAC Flyer

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COVER: Standing alert for a mercy mission, the C-9 Nightingale and its crew portrays the dedication of all MAC flight and maintenance crews. Painting by TSgt Wayne L. Mills.

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A Christmas Message

Though December is the conclusion of the year, for me it is more of a beginning. This is my first appearance in **The MAC Flyer.** It is also my first opportunity to send you and your family season's greetings.

In December, we often look in three directions. First, we keep an eye on the traditional round of family festivities, parties, and get-togethers that claim much of our time. We also tend to glance back at the past year — remembering the trials, the continual changes, the great challenges, and hopefully our accomplishments. Then we look ahead — to the new year, 1973.

In a few more days, 1972 will be gone forever, and the records we have set will be posted in some volume of history. In its place we will have a new "checkbook" which will contain 365 days — how will we use it? We know that we will face tough problems such as less money, fewer people, and new, more demanding missions. Yet we can make 1973 a record of success, **if** — **if** we can meet and master the challenges.

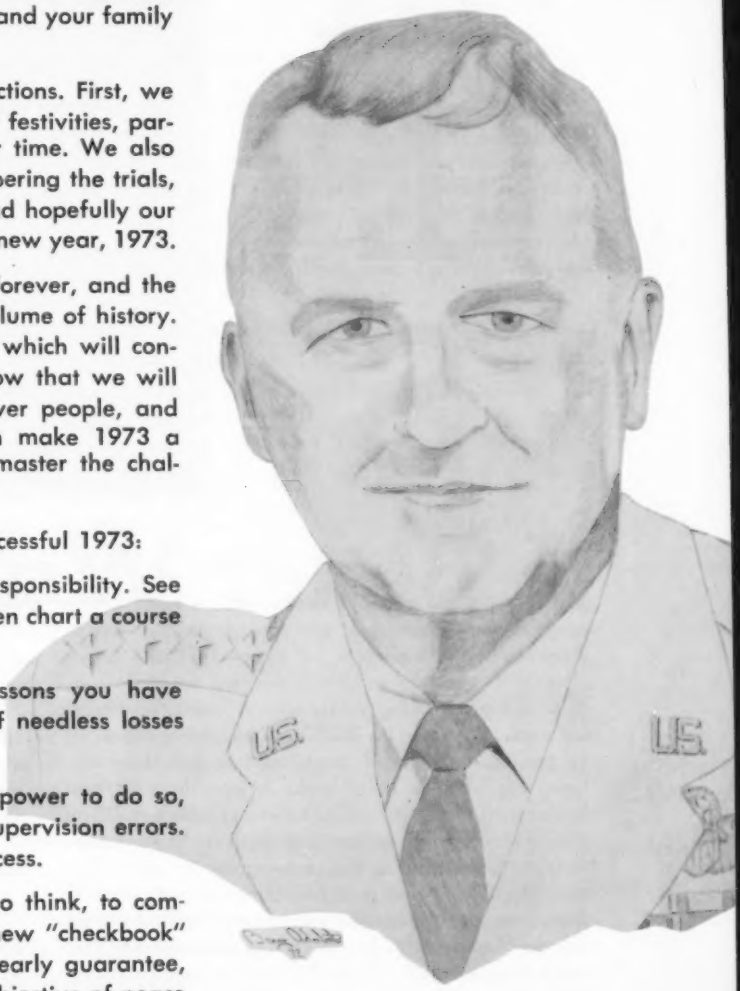
Here is what I expect you to do for a successful 1973:

☆ Take a close look at your area of responsibility. See how many things you could be doing better, then chart a course for improvement.

☆ Pass on to others some of those lessons you have learned the hard way. Save them the pain of needless losses and senseless injuries.

☆ Resolve that, as much as is in your power to do so, there will be **no** mishaps due to personal or supervision errors. Your integrity will be the keystone of unit success.

I ask that you accept these challenges to think, to communicate, and to work — in order that our new "checkbook" for 1973 will more accurately reflect, more nearly guarantee, and more consistently build toward our joint objective of peace on earth.



Paul X Carlton

ILS began in the early Gooney-bird era, and GCA came along soon after. Now, a new system is on the drawing boards.

MLS

A Better Way to Arrive

IN YOUR MIND'S EYE, picture a foggy, rainy, *very* black night. You're on the final leg of a trip that has lasted 12 days and, man, has it been a real bummer. Sick birds, lousy weather, you didn't make it into the zone, and you're tired. Then, the center controller calls to tell you that your homeplate weather is going from bad to worse, and he wants to know if you are going to your alternate. The crew groans and you immediately know their sentiments. You punch the mike button and tell center that you have enough gas to try the approach and still reach your alternate. He hands you off to approach control and they clear you for an approach. You twirl a few knobs and you lock on to a course that gives you distance and direction to the runway plus altitude, and you float down through the crud. You can see the strobes now — you check the altitude, 75 feet — distance to the runway 700 feet. You flare and land — another mission complete.

All imagination? No — an approach like this is possible with the fancy new microwave landing system (MLS). But don't feel cheated if your bird doesn't have the newest equipment, because no one has an operational unit yet.

MLS Means Good News

MLS is the hardware part of an FAA-managed national program that will eventually replace the existing VHF/UHF instrument landing systems. It employs advanced electronic technology designed to provide the safest, most accurate radio guidance possible for landing an aircraft. The signals are suitable both for display to the pilot and as inputs to an automated flight control system.

Technically, the system works like this: MLS is an air-derived data system operating at microwave fre-

quencies. Ground stations generate electromagnetic signals that enable airborne units to obtain precision azimuth and elevation angles and range data, all referenced to a ground radiating runway system. The angular position of the aircraft is measured by reference to the ground-generated beams that scan across the coverage sector in both azimuth and elevation. The airborne unit extracts the angle data to obtain the line-of-sight angle from the ground antenna. Range measurements are made by airborne interrogation of a ground transponder.

The MLS concept fills a long-standing need for greater efficiency and safety in air operations. It will overcome many limitations of the existing ILS and add new dimensions of accuracy, flexibility, and all weather capability. MLS will be a universal system capable of meeting the needs of all users — U.S. and foreign, civilian and military, and general aviation — at least until the year 2000.

Current Systems

The first instrument landing system (ILS) was demonstrated in 1939 but the system was not adopted for national use until 1941. And it wasn't until 1949 that ICAO adopted the ILS as an international standard. Interestingly, this ILS has remained essentially unchanged over the past 30 years, and is still the primary instrument approach aid used in civil operations. Although ILS was used by U.S. military aircraft during the early part of WWII, its tenure as chief system was brief. In 1944 the radar ground controlled approach (GCA) was introduced and because of its operational flexibility it became the standard landing aid for the military services.

The military aviation community has not ignored other systems, but research has been limited. As early as 1946 the Air Force tested a microwave landing system, but it was not pursued. The Navy in 1950 started work on an MLS carrier system. Through the years, over 40 separate military developments have been either investigated or partially developed, but none has reached the stage of acceptability as a common civil-military replacement for the ILS and GCA systems.

Comparison

In general principle, MLS is similar to the current ILS. ILS ground stations transmit electromagnetic signals to an approaching airplane. The aircraft equipment processes these signals and provides azimuth and elevation information, plus range information when the ILS position is compared with altitude indication. MLS is similar but better: range information is a basic part of the data provided, and all values are more accurate.

The main difference between the two systems is in signal wave length. A microwave is an electromagnetic wave of extremely high frequency — about 50 times higher than the VHF/UHF-band frequency of the ILS. The higher frequencies give several advantages; for example, the ILS signal pattern is very broad and is affected by trees, hangars, and over-flying or parked aircraft. All of these objects serve as signal deflectors and distort the ILS pattern. The higher frequency MLS signal permits focusing of energy in a much narrower beam. This narrower beam is less prone to interference and thus offers signal quality far beyond the capabilities of the most advanced type of ILS. Additionally, the microwave signal will scan through very wide angles, affording new latitude in the number and types of approach and landing patterns.

Another advantage is that MLS will have greater dependability. By virtue of its insensitivity to environmental interference, MLS will provide high-integrity, extremely precise signals, and permit all-weather operations at a greater-than-ever degree of safety. The ultimate goal of Category III zero-zero landings — which can be achieved by augmented ILS at some but not all airports — will be attained.

Other Advantages

One of the side benefits of MLS is that it will improve noise abatement. The current ILS is limited to a single approach path, but MLS will provide multiple paths, with varying glide angles, segmented or curved as well as straight-in.

MLS can also reduce congestion in terminal areas. Today's instrument landing systems are often limited not only by runway capacity but also by the necessity of mixing slow and fast planes in a single flight path. With a variety of approach paths (both horizontally and vertically) aircraft could be sequenced more efficiently, minimizing delays and increasing capacity. The microwave's precision and flexibility will increase capacity by allowing installation of MLS on parallel runways with less separation than that needed by existing runway ILS operation.

MLS flexibility will accommodate the special needs of a variety of unconventional forms of flight activity; for example, current and future V/STOL aircraft and helicopters, tactical military operations at unimproved forward area bases, or landings on aircraft carriers. In addition to enabling the Air Force to pursue the mobile warfare concept, MLS will permit true all-weather helicopter operations.

Equipment Configuration

At present, plans call for three airborne configurations. A simple general aviation unit will indicate range, azimuth and glide slope. A middle performance

Microwave's versatility will allow low visibility approaches into restricted areas.

unit will add the pilot capability of selecting azimuth and glide slope angles for increased approach flexibility. The full performance package will add the capability of flying special paths such as segmented or curved horizontal and vertical paths for complete all-weather operations. Presently, the Air Force has an interim system that will be installed in a limited number of tactical cargo aircraft.

The ground and airborne units will be designed to be completely compatible. The simplest MLS airborne equipment will be able to operate off of the most sophisticated ground equipment and vice versa. This compatibility will be especially important in forward area operations. Toward this end, the Air Force will require their general ground microwave system in two sizes — man transportable and airlift package size.

Coordination

How are these systems going to be developed and coordinated to achieve this high degree of compatibility? By following the National Plan, which is a combined DOT, DOD, and NASA program. This Plan came about when the U.S. airlines, in 1967, voiced their needs for a completely new landing system. By the end of 1967 a special committee of the Radio Technical Commission for Aeronautics had been established. This commission, comprised of a group of government and industry experts, worked for more than two years to produce the recommended system concepts which formed the foundation for the National Plan for development of the MLS.

In addition to their planning and development responsibility, the special committee is charged with keeping the flying community informed. Throughout the development of the microwave system, they will keep the Radio Technical Commission, Aircraft Owners and Pilots Association, Air Transport Association, International Civil Aviation Organization, and North Atlantic Treaty Organization apprised of MLS progress and will strongly encourage their coordination.

MLS at Every Airport

Useable MLS will not become a reality overnight. In fact, the operational equipment is just in its infancy. Much of the project, which began last year with proposals by a number of industry teams, is still on the drawing board. Prototypes will be developed and production is scheduled to begin in 1977. A number of systems will be operational, according to the National Plan, by 1978.

Nor will the universality of MLS be achieved immediately. The transition will be gradual, with FAA continuing to install conventional ILS equipment for several years after MLS becomes operational. And these new ILS installations will operate for many years thereafter. The first MLS units will probably be installed at special-use airports such as stolport sites, and to fill Category III needs, and then gradually appear over a period of years at other major airports until eventually — assuming foreign acceptance — MLS replaces the existing ILS as the ICAO standard.

We can see a number of advantages of MLS for Air Force use — with accuracy and versatility near the top of the list. We hope key military aviation agencies, especially the Air Force, will lead the way in updating our aircraft and ground systems so that MLS will be operational in the next decade.

(Adapted from FAA Aviation News)

Guest Yarn: The Great Gas Tank Gaffe

From out of the past we present the stirring saga of Clutch Cargo — by day, a mild mannered captain, AFSC 6044, stationed with a MAC unit somewhere abroad; by night, Clutch Cargo, is able to leap tall air freight warehouses, correct erroneous ASIF documentation, and move faster than a speeding 10K Hyster. We join Clutch and his sidekick, Super Sarge, in their latest adventure, "Flammable Liquid Spills."

The place: A MAC air freight terminal, special handling section.

The time: 2000 hours.

The setting: Two traffic types are deep in conversation.

Sergeant Jones: "Hey, sarge, I'd like to get this MD-3 power unit processed and on a flight tonight."

Sergeant Smith: "Well, let's see. Paperwork seems in order, DD-1387-2 is made out and it's marked 'fuel in tank.' It's not over three-fourths full is it?"

Sergeant Jones: "Naw, it's only a quarter or a half full. You don't need to do all that checking around anyway; what's it really matter? Hey, what's that noise?

Sergeant Smith: "It appears to be . . . yes, yes, it's a new Space Corporation 40K Diesel and it's being driven by a masked Air Force captain!"

Sergeant Jones: "And look — there's a super striper running beside it!"

Clutch Cargo: "I couldn't help overhearing your question, Sergeant Jones, about does it really matter. This fuel tank flap is of great concern to all of us in the airlift business. There have been nine flammable liquid spills in the MAC system since 1 January 1972."

Super Sarge: "Right you are, sir. This indicates a definite lack of proper inspection by the shipping organization, TMO or aerial port. As one of the key links in this chain, we are responsible for ensuring that cargo placed on an aircraft is as safe as can possibly be."

Clutch Cargo: "Right on, Super Sarge. Each of us must remember that the safety of aircraft, crew, and passengers is in our hands. A careless act on our part could not only result in great property loss, but much worse, the loss of human lives. Now let's check this MD-3."

Super Sarge: "Chock full of gas, sir. At 25,000 feet it would have looked like you'd struck an oil well. Better take it back, Sergeant Jones, and next time do it by the book — do it right. Well, sir, we'd better be off."

Clutch Cargo: "Right, Super Sarge. Let's go. You can ride on the 40K."

Super Sarge: "Now, sir, you know that we are strictly prohibited from carrying passengers on vehicles not specifically designed to have a passenger carrying capability."

Clutch Cargo: "One hundred percent right, Super Sarge."

Sergeant Smith: "They're gone, but they left this, a tiny silver forklift. It's inscribed, 'Nine flammable liquid spill accidents but not one in the 435th area. Good show, 435th, and keep up the good work!' What do you think of that Sergeant Jones?"

Sergeant Jones: "I think you've got pretty good eyes to read all that on that tiny forklift."

(Courtesy 435 MAWg; from MAC RP 76-1)

General Ryan's Seven Points:

What's Your Attitude?

General Ryan's Seven Point Safety Message . . . This phrase should ring a bell with every blue suiter who is directly, indirectly, or otherwise involved with aircraft operations. If it doesn't, stop now and check the opposite page.

It's been nine months since General Ryan first sent his seven point safety message to all major commands. The MAC reaction when we received it was "We're in complete agreement — and our lack of accidents tends to prove it." Then we suffered four major mishaps — and in each, shortcomings involving one or more of the seven points popped up. Though we were not the only command thus afflicted, there is little solace in being listed among the also-rans, no matter how long the list.

As General Ryan reminded us, some six months after his first message, "We have continued to suffer crew and aircraft losses due to blatant supervisory lapses, lack of aircrew discipline, regulatory violations, command and control flaws, faulty maintenance, and the inability of our aircrews to respond properly to inflight problems and emergencies." He was convinced that at least a part of our response effort was little more than one-time busywork and eyewash, and he was not pleased. In fact, the problem was called "a decline in professionalism."

In passing on General Ryan's comments to MAC forces, General Carlton added this thought: "Developing accident-free mission performance is an open-ended program. It does not stop after you meet to discuss it or put out a letter." He encouraged all lower echelon commanders to establish a reverse flow of information; to give the workers and first-line supervisors a chance to sound off and feed back information on weak points and problem areas. And that's where you come in.

No doubt the first thing you noticed about the seven points is that they are not aimed directly at you, but at the hierarchy — the policy and rule makers. Not being one of "them" you probably lost interest right away, thinking, "It's someone else's problem." But is it?

Take another look at the opposite page. Each point is totally dependent on people to make it work. Looking even closer, you'll find the real key is attitude. **Your** attitude.

As an aircrew member, you know that once the gear is in the well the buck stops. It's all yours; your entire future depends upon your actions or inactions. Now, visualize yourself in this environment and think again of General Ryan's seven points — are they the responsibility of only the hierarchy? You can bet your next pay raise they're not. Try preceding each of the points with this question, "Have I done all that I can to help . . . ?" Be honest, and if you're not satisfied with your answers, do something about it.

Remember, your attitude is the key to your future. The seven points involve everyone from top level management down to your crew bus driver. Ask yourself the seven questions again. If you'd hesitate to fly or work with someone who answered just the way you did, maybe you've figured one of the roots of the problem.

General Ryan's Seven Point Safety Message

1. Insure strict compliance with established command and control procedures and directives.

2. Review training objectives for validity, including knowledge of operational procedures, emergency procedures and aircraft limitations.

3. Strengthen evaluation programs to achieve objective assessments of aircrew capability, including flight preparation, briefing and compliance with established procedures.

4. Demand direct and responsible supervision by squadron commanders, operations officers, and flight commanders to insure compatibility of mission requirements with aircrew capabilities and to insure maintenance of the highest standards of aircrew discipline.

5. Insist on quality maintenance, objective quality control and strict use of technical data.

6. Require that the hazard identification program be carefully monitored and that prompt, positive corrective action be taken.

7. Require a meaningful review and analysis of the full implication of all reports of aircraft accidents and incidents, Air Force-wide, by all flying and maintenance personnel.

by A. V. (Tony) LeVier
Lockheed Aircraft Corp.

I BELIEVE THAT EVERY PERSON is accident prone to some degree. The extent to which someone might be involved in an accident or incident depends on his recognition of the hazard and the amount of caution he used to avoid it. In thinking and talking about accidents, each person will place different values and importance on a given hazard.

A housewife might think that her greatest hazard is driving the family car; therefore, she drives very carefully to avoid an accident. But she will climb a shaky ladder to reach some spices in a high cupboard and then fall and receive serious injury.

A construction worker may be aware of the many hazards on his job such as falling objects, slipping from a high scaffold, and the like. Then he relaxes his attention too much while driving home, and *Bang!* — he's involved in an auto accident. Small children — unaware of all this foolishness — inflict on themselves just about every risk in the book. But, because of some secret formula prepared especially for youngsters, they survive — to become accident-prone grownups.

Most people enjoy a reasonably safe existence because they live and work under relatively safe conditions. They exercise normal precautions in almost everything they do. You might say that these people have developed good hazard judgment; however, everyone has experienced some small accident in his lifetime. The common culprit: a lapse in hazard judgment.

There are also people, called exhibitionists, that take chances for a living: motorcycle performers, automobile race drivers, airplane racing pilots, and stunt pilots. The accident potential in these high-risk professions is extreme. Survival depends on extremely good hazard judgment.

Okay, let's talk about flying airplanes; that is our profession — yours as Air Force pilots and mine as a civilian test pilot. We both fly the same kind of aircraft under somewhat the same conditions and environment. How do we compare then as far as accident rates are concerned? If we break that down to cause factors, pilot for pilot, how do you think we stand?

Actually, fellows, the records show that no matter what kind of pilot you and I are — private, commercial, airline, military, or test pilot — as a group we account for 50 percent of all aircraft accidents. It will vary a little one way or another, a few percentage points from year to year, but by and large, it remains about 50 percent. The other 50 percent is made up of several causes; for example, the 1972 world-wide accident statistics for brand X aircraft were:

Pilot	50%
Engine	4%
Aircraft	16%
Maintenance	4%
Miscellaneous	4%
Undetermined	22%
	100%

Obviously, the *people* in flying seem to make up the biggest hazard to flying. And the quality of your hazard judgment depends on how well you know the people — in fact, on how well you know *yourself.*

ΑΕΡΙΟΣ ΠΛΗΜΜΕΛΗΣ ΕΙΧΝΑ

Mr. LeVier is convinced that pilots (and others) must either become hazard judges or hazard victims.

If you have developed good hazard judgment, it is the result of many traits. You are well organized, have been well trained, have better than average flying skill, and most of the time possess a unique quality called "self-discipline."

Since the early days of flying, these ingredients have been the mark of a good aviator. With such a make-up, you will probably enjoy a safe flying career. If, on the other hand, you lack any of these ingredients, I believe you stand a darn good chance of running into trouble somewhere along the line.

Military aviators are the best trained pilots in the world. There is no question whatsoever that this statement is true. From your very first exposure to military flying, right on through your primary, secondary (or basic), and advanced flying training, and your assignment to a flying unit, you have had the very best in equipment, facilities, and leadership that your government could give you.

Most of you have measured up admirably to the responsibility placed upon you by your Air Force and country. But what about the few within our ranks who wander into trouble? Well, they are the "bad apples" in the barrel; they have poor hazard judgment. It could be you or your best friend. It might even be the unit commander, but not likely. When I say "bad apples," I don't mean that literally. I like to think of us aviators as pretty good guys, and, generally speaking, we have a great love for our profession and work hard to do a first-class job. But, flying has always been inherently dangerous, compared to normal ground-bound professions. For that reason alone, the requirements for being aviators will always be higher, especially for military pilots.

The ingredient that makes the difference between whether or not a person flies is the personal desire to engage in something that is interesting, exciting, and contains an element of hazard not generally found with earth-bound operations. I say this because when I first thought I would like to become an aviator, back in 1927, I believed that an aviator was a special kind of a person and that I might not be able to qualify. Also, on my first attempt to take an airplane passenger flight, I became unnerved several times during the course of the day, and finally gave it up for sheer lack of confidence in the aircraft being used for passenger flights.

Getting back to the "bad apples," let's label them "aerial delinquents." They all have poor hazard judgment. Aerial delinquency, as you know, exacts a high price in machines and men. To illustrate the types of aerial delinquents that I have known, I want to exaggerate their failings for you and I'll give each one of these guys an appropriate name.

The first type that comes to mind is Crazy Cal. He will literally terrify you with his apparent loss of contact with the reality of living, once he's in the cockpit. Normally, he's buzzing the countryside with complete disdain for life and limb.

Another one is Rebel Rob. He's the die-hard non-conformist who won't learn any new flight safety rules that come with his newly designed aircraft — which just happens to have quite a few new flight characteristics.

A third type is Acrobatic Archie. He's the born showboater and can be seen trying some spur-of-the-moment, unpracticed maneuver for the bikini babes on the beach.

Also, there's Sucker-Trap Sam. This poor guy has fallen into more traps of his own making than you can imagine. He's usually found around base operations, filing a cross-country smack into a severe weather area and mumbling, "No sense planning for an alternate — that weather'll be gone by the time I'm there." Or, "That tire's good for another hop — I'll write it up at the home drome." And on and on — a familiar song.

Finally, there's Haphazard Hal. Neat, precise planning

*

ΝΑ ΕΠΡΩΧΝΟΥΝΕ ΜΑΡΓΑΡΙΤΕΣ

*

Aerial Delinquents Often Become Daisy Pushers

has never been his forte, and he still has sloppy, incorrect flight cards, last year's checklist, and hasn't the foggiest notion about all the new modifications that have been made on the squadron's birds. You know the type.

Now, admittedly, these are exaggerations, but within us all is the potential to let these characters surface at just the wrong time. At this point, you might say this guy LeVier makes it sound like we're a bunch of "bad guys." Not at all. In my opinion, most military pilots are the real pros of aviation — well trained, good habits, self-disciplined. The better ones even give the impression of being "fail safe." But we can find traces among us of the five characters I have listed. I know this because many have been "friends I have known." Of the five, though, I believe that Sucker-Trap Sam is predominantly the worst "bad apple" in the barrel. I say this because of the preventive measures taken against the other four.

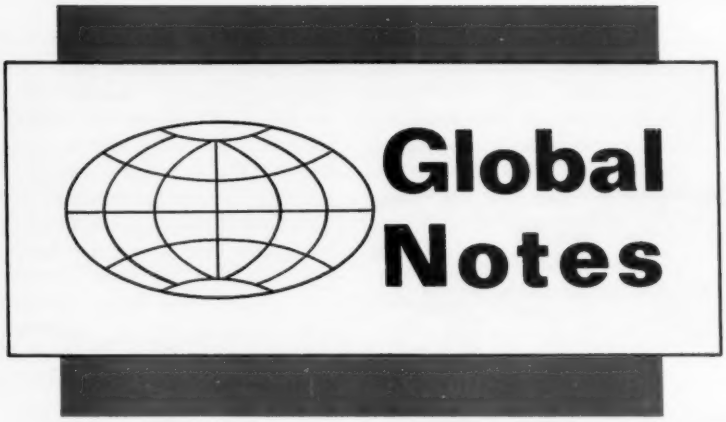
Crazy Cal can hopefully be eliminated by the cross-checks and watchful analysis of the instructor pilots in Air Training Command. Rebel Rob usually finds there are damn good reasons behind the safety regulations and, with any smarts, he realizes that he's fighting the wrong battle and should join the team. Acrobatic Archie finds himself quickly grounded — temporarily by military orders or permanently by six feet of dirt and daisies on top of him. And Haphazard Hal can be trained for good habits and kept in proper order by periodic standardization checks. But what about old Sucker-Trap? We single cockpit jocks are faced with the challenge of fighting off this aerial delinquent every time we strap in. I believe nearly every pilot has been a Sucker-Trap Sam sometime or another. Speaking for myself, I will admit to being suckered in several times in my flying career, and each time I knew there was an added hazard which I had failed to analyze carefully enough.

There are so many ways a pilot can get suckered into a trap, there is insufficient space in this article to list them all. However, one classic stands out. A fine pilot with an excellent military background took delivery of a new fighter plane from the factory. Ordinarily, such a flight is routine with no more than a cursory check of the systems. However, before departing the area, the pilot elected to perform a loop over the air base to salute or pay homage to his friends watching from below. A circling maneuver into position over the runway in full afterburner started the show, followed by the usual upward curved flight path. But instead of just a zoom into the heavens, the aircraft continued on over upside down and then down the backside. At approximately the vertical position nose down, the afterburner was cut off. The aircraft had been serviced full up, including tips, and was extremely heavy for attempting a low level loop. The pilot at this point probably recognized the seriousness of the situation and started pulling as many Gs as he could, but to no avail: the sucker trap was shut — there was no way out.

Okay, how do we as individuals evade old Sucker-Trap and his noxious pals? I think each pilot must continually make a self-analysis. What kind of a pilot am I? Do I really measure up to what I think of myself? All pilots are expected to perform according to certain rules and regulations or SOPs. Most pilots do, except for the delinquents.

In a military flying squadron, the commander has one helluva responsibility to produce an effective fighting force, and to maintain this force day in and day out with the least possible exposure of the squadron to incidents and accidents. To accomplish this, each and every pilot has to ask himself — at regular intervals — "Do I come under the label of aerial delinquent?" If you do, change your ways and develop good hazard judgment. Remember, aerial delinquents often become daisy pushers!

Tony LeVier began his flying career on the first of July, 1928, at the age of 15. He earned his commercial pilot's license in 1932 and barnstormed across the country, flying acrobatic and racing planes, until 1939 when he joined the Douglas Aircraft Company. In 1941 he went to work for Lockheed where he remains active to this day. During WW II, he did extensive test work on the P-38 — including the most comprehensive compressibility dive test program ever conducted up to that time. In 1944 he was the pilot on the first test flight of the XP-80A, which later became America's first operational jet fighter. He was the copilot on the first test flight of the Lockheed Constitution and the pilot on the first flights of the: T-33, XF-90, F-94A, XF-104, T2V-1, and the U-2, and many others. He invented the Master Caution Warning Light System for aircraft and was the first to conceive of the idea to locate aircraft trim switches on top of the control stick in jet aircraft. He is the author of an autobiography entitled "Pilot" and has been a frequent contributor to military publications.



aerial port troops set record

The 438th Aerial Port Squadron, commanded by Col Joseph W. Lentine, recently set a Military Airlift Command record for 1972. The unit completed a six-month delay-free period on originating flights. In that time, the squadron processed over 100,000 passengers, moved more than 7,546 tons of cargo, and serviced 2,535 aircraft outbound. In addition, the inbound workload included 108,600 passengers, over 15,000 tons of cargo, and over 4,000 aircraft.

first in fuels

The Fuels Management Branch, 436th Supply Squadron, Dover AFB, was recently selected as the best fuels management operation in Military Airlift Command. The branch will represent MAC in the Air Force-wide American Petroleum Institute Trophy competition. The categories to be considered in the competition are: mission support, operations, quality control, maintenance, safety, management, accounting, administration, and base fuels evaluation.

watch where you put it

Air Force has found that the commercial air lines have confiscated several MC-1 survival and hunting knives aboard certain flights. They are requesting those personnel attending survival school not to carry knives on their person or in carry-on baggage. Put your knives and other personal survival equipment in checked baggage.

ace wrench benders

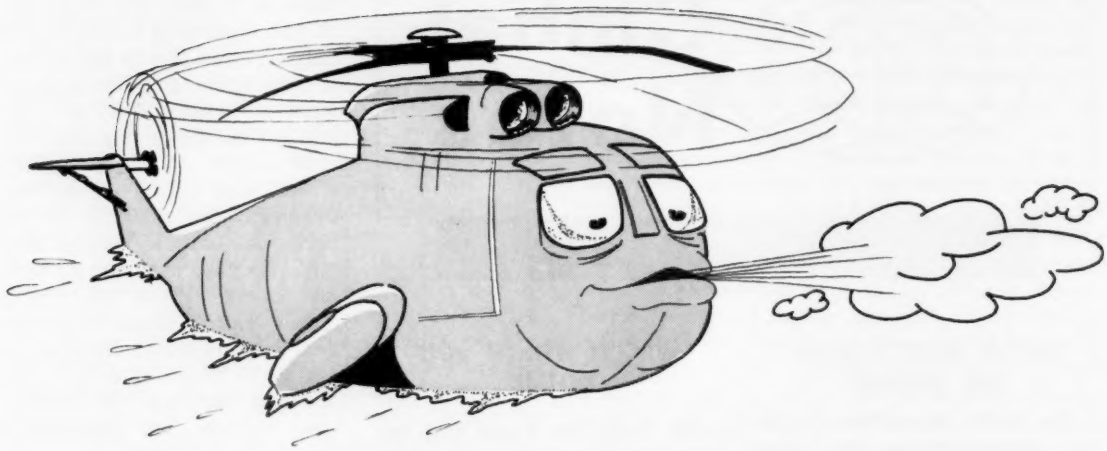
Two MAC maintenance men — MSgt Daniel F. Rein from Lajes and A1C Michael D. Riley from Andrews — have been named to receive awards recognizing them as the most outstanding NCO and airman assigned to a MAC maintenance function for FY 72.

In July 1971, Sgt Rein was assigned as NCOIC of the CAMSq Enroute Section. The en route traffic volume was high while the morale, discipline, effectiveness, and productivity of the section were at a very low point. Within a month, Sgt Rein had so reorganized and revitalized the section that it became the best section of the squadron. Morale increased, a spirit of competition sparked in his people, and through his personal efforts all aspects of en route maintenance were performed in a superior fashion. In view of his ability to manage, control, and supervise, he was transferred to the HC-130 Section, and again he led the way to an outstanding accomplishment—an average MAC en route mission reliability rate for transient aircraft of 96.8 percent. His efforts were among the reasons General Catton cited his unit for having the best HC-130s in MAC.

Airman Riley was cited for helping to design and fabricate a unique closed circuit television system rotary image changer. He also made many of the parts from salvaged materials. His mechanical aptitude and exceptional knowledge of electronic circuity were largely responsible for the success of this project. Airman Riley's devotion to duty and creative ability greatly enhanced the squadron's mission capability.

presidential unit citation

The 3d ARRGp, Tan Son Nhut AB, Vietnam, has been presented the Presidential Unit Citation for extraordinary heroism during the period 1 February 1969 to 30 April 1970—its third such award during its service in Southeast Asia. Gen John W. Vogt, 7th AF commander, presented the award. The citation specified that members of the group "daily risked their lives" in rescuing downed crewmembers. During the citation period, 714 U.S. and allied personnel have been rescued, 516 from "almost certain death or capture . . ." The unit holds the AF Outstanding Unit Award with V device for valor, the Vietnamese Cross of Gallantry with palm, two Republic of Korea Presidential Unit citations, and ten battle streamers.



The Old Rotorcraft Bugaboo

As THE AIR FORCE celebrated its 25th anniversary in September, we were deluged with articles — many highly fascinating — on how things *were* versus how things *are*. The changes in dress, pay scales, organization, and missions have been pretty impressive. But the progress in flying machines has been nothing short of fantastic over the past 25 years. Compare the C-54 to the C-141, the F-51 to the F-15, the B-50 to the FB-111.

And look at the helicopter — 25 years ago it was just in its infancy. Since the days of the unstable, underpowered recip 'copters, we've leaped ahead to the giant gas-turbine cranes, troop and cargo carriers, and armed, air-refuelable rescue helicopters of today. Yes, we've seen a lot of progress but not all the problems of rotary wing aircraft have been solved. For example, even the fully-instrumented, automatic flight control equipped helicopters in our inventory today can't endure that old bugaboo, icing. A simple system for anti-icing or deicing the rotating wings and bulky fuselages of helicopters has yet to be installed on our choppers. In fact, you can literally buy a one-way chopper trip to the ground if you try to fly in icing precip.

It should go without saying that flying machines with such limited capabilities should be operated with caution and not be subjected to conditions which they cannot handle. But every winter a few pilots press on in sloppy weather until their chopper takes on a load of ice. The end result — if they're lucky — is a forced or precautionary landing. And betting on the landing characteristics of an aluminum-lined iceball is a little like waiting for cows to fly.

Apparently, some pilots have to learn the hard way because they don't believe they will get bit. Consider this example, as reported in *Approach* magazine, which involved a couple chopper jocks from the Navy.

One

The pilots of an H-3 filed from

NAS Cranberrybog to NAS Fleetsville. The weather at "Bog" was 1,500 overcast, 5 miles in haze, temperature 39 degrees F, winds reported as light and variable. Forecast destination weather was 1,000 broken, 300 overcast, and 7 miles visibility. En route, the weatherman was calling for rainshowers and snowshowers, icing in clouds, and a freezing level at 5,000 feet.

Initially, the IFR clearance called for an assigned altitude of 4,000 feet. Plenty of cold water, but no sweat. However, before they reached level-off, their altitude was changed to 6,000 feet by Big City Center. Oh, well! They accepted the higher altitude without demurring and settled down for the two-hour flight.

Despite flying in and out of showers for an hour and a half, with ideal temperatures for icing, the helicopter droned on — those two big turbines were singing sweetly. Then, as the crew tooled along the airway over Big Bay on the last leg, they requested a descent. Their request was granted, and while descending with OAT plus 2 degrees C, the helo encountered heavy precipitation of mixed snow and rain. The crew noted slush on the windshield, but there was no visible ice on the wipers or sponsons (the usual places). Then number one engine compressor-stalled with a noticeable torque split. Light compressor stalls continued until the pilots shut down number one. Now, logic says that if one engine ices up, the other one might, too. But luck was with the two pilots because number two engine kept operating normally, and they made it across Big Bay without having to ditch.

Why did number one act up? A post-flight look at the engine gave the answer: there was ice damage to the inlet guide vanes, first stage stators and first and second stage compressor blades.

Two

Here is another example which shows that pressing on in icing conditions can be thrilling. An H-21 was returning to home station in weather which could be described as less than desirable. The crew found themselves dodging snow showers and dropping to treetop level to keep visual contact with the ground. Conditions were obviously ideal for icing; in fact, the nose wind screen was picking up a lot of ice. But the old bird wasn't showing any control difficulties and, other than requiring more power, all was going well. Suddenly the chopper jerked and jumped and beat as though it had thrown a rotor blade. The crew hung on for dear life and managed to get the wild "Workhorse" back under some degree of control. Fortunately (more betting on luck!), when the first blade ice started to break off, the violent vibration soon shook the ice loose from the other blades. After shedding the accumulated blade ice, the ship settled out straight and level and the pilots continued on for an uneventful landing.

So . . .

When you defy general flight rules, you may invite an accident. When you violate regulations and flight manual instructions, you may open the door for a mishap. But when you spite Mother Nature and challenge the inexorable laws of aerodynamics, sooner or later you're going to have your hands full. Chopper jocks, *believe* that WARNING in the flight manual concerning icing conditions. When a machine has limited capabilities — especially in the realm of inadequate or totally nonexistent anti-icing devices — don't push yourself or the machine over the brink. Unlike the pilots in these two examples, you may not be so fortunate.

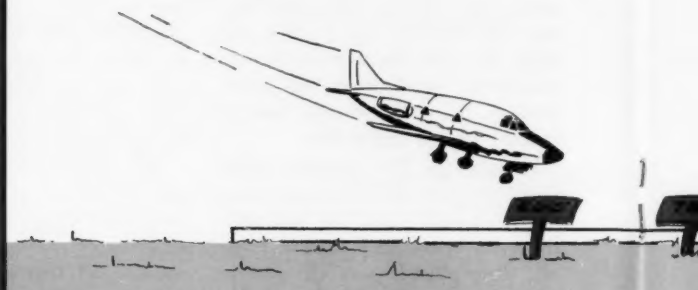
Progress has been great, but the old bugaboo, ice, is still a major problem for choppers.

Martini-makers like ice. Skaters like ice. Reindeer like ice. But choppers and ice don't mix. If you can't avoid ice—land.

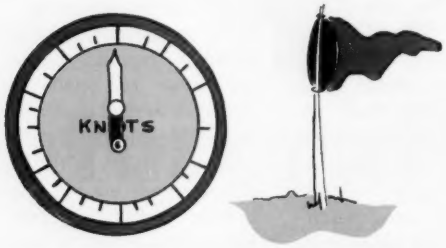
Anti-Landing-Short Reminders

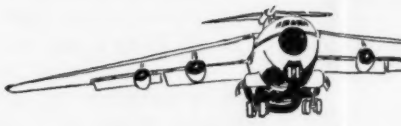
(courtesy Lt Col T. J. Slaybaugh, USAF Ret)

Aim for a point 750-1,000 feet down the runway. Don't forget 50 feet over the end.

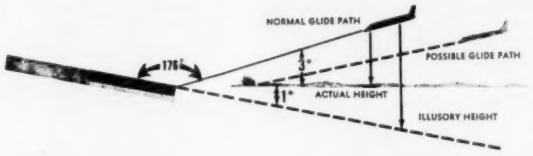


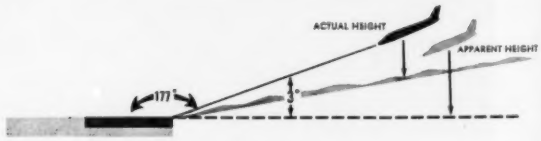
If the winds are gusty, add the correction value for your aircraft.

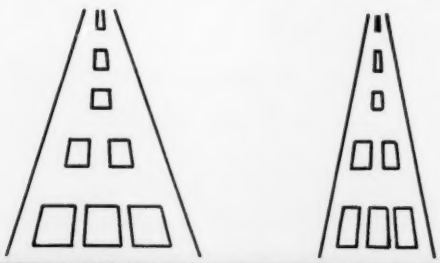




Use all the approach aids — VASI, GCA, ILS, approach lights — whether you're IFR or VFR. Keep the aids in your cross-check after minimums, too.

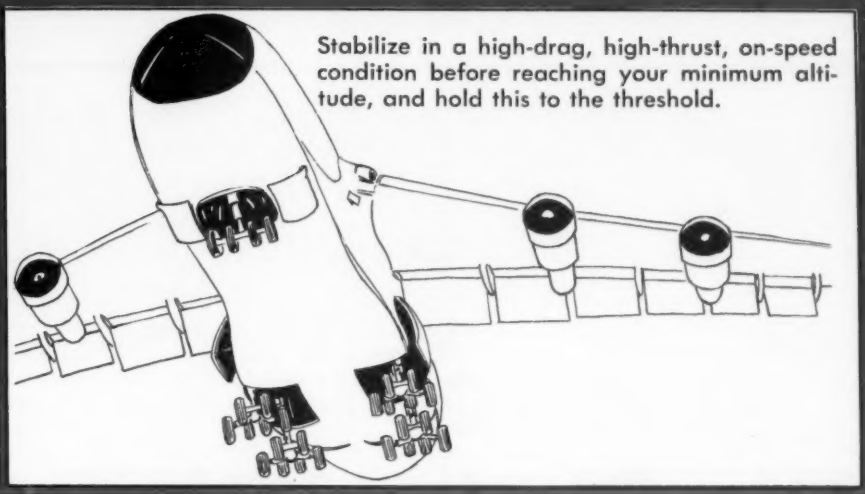




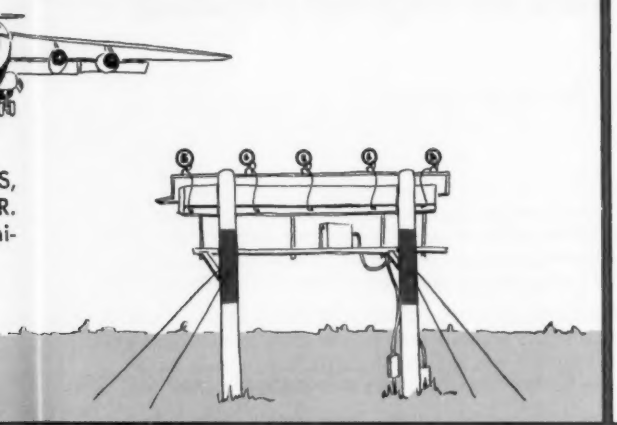


Consider the illusion causers. Upsloped runways make your approach seem steeper. Refraction errors from rain on the windshield can make you seem high. Wide runways seem closer than narrow ones. You'll tend to fly higher over downslopes and lower over upslopes in the approach zone.

Nob
sour
miss

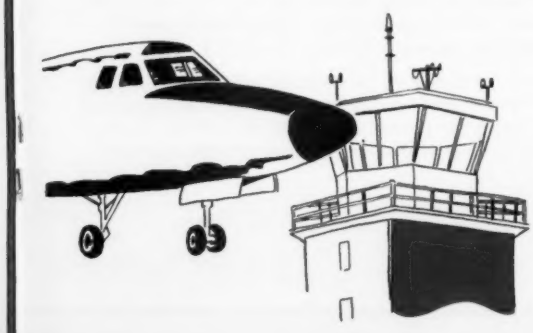


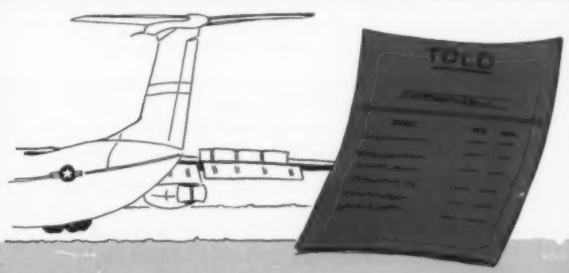
Stabilize in a high-drag, high-thrust, on-speed condition before reaching your minimum altitude, and hold this to the threshold.



Good flying habits will keep the land or go-around options open. Poor habits will lead to short landings.

Nobody is perfect all the time. When things go sour, take it around. Practice a well-executed missed approach from time to time.





Know the facts — like how much runway is available and how much you'll need to stop. In most landing short cases, the runway available was greater than the runway needed to stop. Better to go off the far end slowly than to prang short and hot.

A safety tale in verse we bring;
Variety's one reason.
Another: such a parody
Is fitting for the season.

Big Shakey Christmas

(Thanks to MSgt Theodore H. Smith, Jr., 443 TTS, Altus AFB, OK)

Twas the day before Christmas, and there sat the crew —
They'd been stuck at Hickam since Dec twenty-two.
Their aircraft was stuffed with the east's finest goods,
But — sadly — their ETIC was lost in the woods.

The crew was dejected; not one wore a smile —
In fact, grumpy frowns were their holiday style.
Their bird sat, disconsolate, far down the ramp,
The cockpit all steamy, the crew bunks all damp.

One engine, stripped naked, had failed from abuse,
And, under a landing gear, lakes of red juice.
A crack in the spar put a droop in the wing,
And made poor Old Shakey a sick-looking thing.

Some gent in a step-van drove up just to bellow:
"The best thing to do is to paint the pig yellow."
The pilot, still hoping that things would go right,
Was filing his plan back to home, direct flight.

When at last, from the chief of the maintenance crew
Came: "Parts plus a week is the best we can do."
The pilot was quick to rebound from the shock —
He'd flown for so long that his head was like rock —

And he said: "Not a man on my crew wants to stay
"So we'll fix it ourselves and we'll go anyway."
The engineer feathered the sick engine's prop;
A crimp in the line made the fluid leak stop.

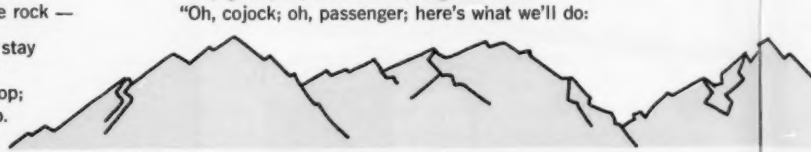
And then, to relieve the cracked spar from its strain,
They beefed up the wing with a twenty-ton chain.
The maintenance troops, in their circle of trucks,
Sat making strange noises like gurgles and clucks.

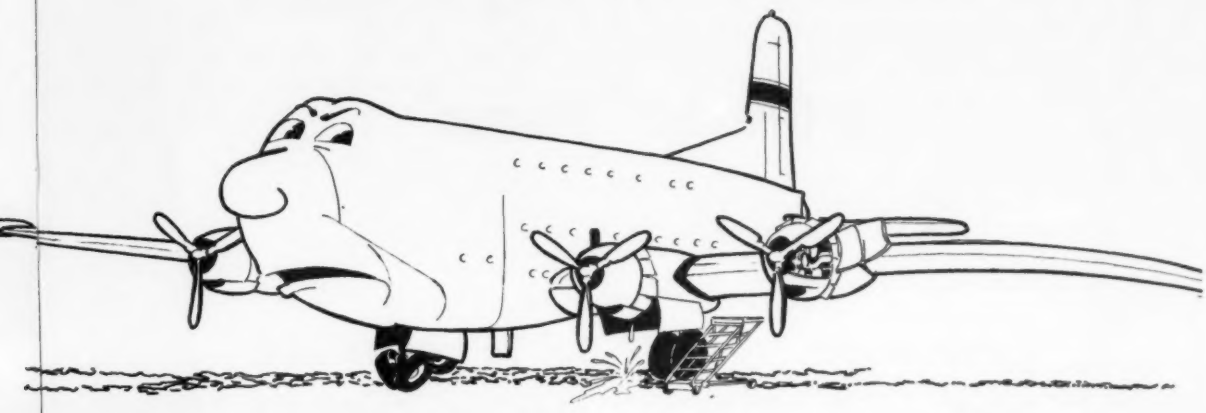
But the fliers, undaunted, at last cranked the beast
And taxied Old Shakey toward the star in the east.
At maximum weight with one engine inop,
They lurched down the runway to start the long hop.

They rolled — and they **rolled** — for a horrible spell
Till the pilot decreed: "Put the gear in the well!"
It took them an hour just to climb to four thou —
Old Shakey was flying a lot like a cow.

And then, as the right-seater called "Level four,"
A tiding of panic descended once more.
"Bad news!" cried the panel man. "Quick! Lookit three!"
"The temp's on the peg and there's no oil to see."

"That's **great**," moaned the pilot; then, thinking things through
He said, "Feather three!" and alerted the crew.
"Oh, 'gator; oh, loadmaster; engineer two;
"Oh, cojock; oh, passenger; here's what we'll do:





"All hands to the cabin — I mean every man —
"We'll jettison cargo as quick as we can.
"Drop tent pegs, drop scrap iron — there's no time to lose —
"Throw everything out but our baggage and booze."

In less than a twinkling they dropped quite a bunch —
The loadmaster said fifteen tons was his hunch.
At last they quit sinking and levelled her off,
And fearfully listened for backfire or cough.

Yet with never a thought of return ("What? Retreat?")
They flew toward November at eighty-five feet.
They roared past the boat ninety yards in the air,
Then crossed the gold bridge with a thousand to spare.

"Aha," said the pilot, just up from his bed,
"We've made it — except for those mountains ahead.
"It looks like we ought to climb almost a mile,
"So come on, you sweetheart, and show us your style."

He eased up the nose of the 'luminum brute,
And straddled the track of the Interstate route.
The wind from the west gave a push up the slope,
But long before Donner they ran out of hope.

Ahead loomed the forests, the snowfields, the stones,
In just a few seconds they'd splatter their bones.
Now, only one helper could pull off that trick,
And high overhead was — you guessed it — St. Nick.

The little old driver, wrapped warm in his sleigh,
Looked down at Old Shakey and groaned with dismay.
"It's Christmas," he mumbled, "A time of good cheer;
"I can't let them bash it at **this** time of year.

So, laying a finger aside of his lip
And giving a nod, he gave lift to the ship.
When the bird passed the crest with six inches to spare,
The right jolly old elf flew chandelles in the air.

The pilot, who knew all along they'd succeed,
Just tipped back his seat and lit up a fresh weed.
Their eyes were as red as the dawn's early glow
When they spotted their home in the desert below.

And just as the rollers had squeaked on the ground
The engines both quit with a deafening sound.
They rolled to the ramp where they stopped the sick brute,
Then started unloading their treasures and loot.

You could hear them exclaim as they drove out of sight,
"We made it! Ops normal! Yule greetings! Good**night**."

It Wasn't Anybody's Night

A One Act "Dramer"

Starring:

Commander	**Col Tellem URSIDE**
Pilot	**Maj Lets CURTAIL**
Crew Chief	**TSgt Gee WHIZ**
Driver	**Sgt Dint WATCHOUT**

Cmdr

Pilot

Crew Chief

Driver

(Adapted from The Naval Aviation Maintenance Safety Review)

ACT I SCENE I

The scene takes place in hangar 2 adjacent to a hole-in-the-wall known as the coffee bar. Outside the hangar the wind is blowing at 30 knots. The thermometer registers 15 below zero and great banks of snow eight feet high can be seen across the ramp every time someone comes in the door. There are a lot of maintenance men standing around in small groups, each with a steaming cup of coffee plainly evident. One group of three stands out in contrast to the others. The members of this particular group are in class A blues as opposed to the rest of the men in fatigues and heavy cold weather gear.

A voice from a distant group: Hey, Whiz, what time does it begin?

Crew Chief: In about 20 minutes.

Pilot: (Nervously) Man, this will be grim. First time anyone ever told me to dress up to see the old man. You'd think that someone would get rid of these old crates before they fall apart.

Driver: My chief told me my tail was in a sling. I don't know what a guy is supposed to do when driving on all that ice. Do you think he'll hang us?

Crew Chief: I still don't know how I . . .

Pilot: Naw, I don't think he'll hang us. Sure hope not — but he could.

Crew Chief: Do you think the pin could have slipped out after I put it in?

Driver: Well, maybe you have an excuse but what's he gonna say to me?

Pilot: Come on you guys, finish your coffee. We'd better start for Wing Headquarters.

Curtain goes down as the three move off. Shouts of others follow them: Good luck! Hope it doesn't hurt! Tell it like it is . . .

ACT I SCENE II

The scene takes place in the waiting room, outside of the Commander's office. There are many people standing around talking in subdued voices. At a quick glance one can see the operations officer, maintenance officer, quality control chief, field maintenance chief, and line chief. As the three principals enter the room, talk subsides.

Pilot: Morning. (No one speaks but a few heads nod in acknowledgement.) Well, if no one's going to speak I guess this isn't going to be any soiree to write home about. There I was, minding my . . . Now, here I am up a creek. Whiz, you and me and Watchout better stand by ourselves. We don't want to contaminate anybody.

Ops Off: Knock it off, Curtail. One thing I don't understand is how you could shut down with the horn blowing? Was it really blowing before you cut number 3?

Pilot: I don't remember but I think so.

Maint Off: The flight mechanic said he didn't think you heard it. Whiz, just where'd you put that pin?

Crew Chief: Right where it was supposed to be. It wasn't the first one I put in. It was so frigid cold I shoved it in and headed for the barn.

Ops Off: Watchout, when you were toolin' around the ramp what gear were you in?

Driver: Most of the time I was in second gear but when I got close to the C-54 I was in low — and that ramp was slippery so I was extra careful.

Another voice: Whiz, you're lucky the nose gear didn't collapse while you were up in the well.

Crew Chief: Couldn't have. The engines were still running. Had plenty of pressure. I still think . . .

Pilot: No sense in rehashing the whole thing here. We're going to have to do it pretty soon for the colonel.

Silence ensues. Shortly, the executive officer appears and summons them all into the colonel's office. Curtain goes down as they all file out of the waiting room.

ACT I SCENE III

The scene takes place in the colonel's office. It's

a large, well appointed office. One sees the pictures of the President, the Secretary of the Air Force, and the Chief of Staff on one wall. An oversized aerial view of the base takes up the better part of another wall. Various organizational charts depicting the people assigned are displayed on another wall. A podium with paperwork on it stands beside his desk. The American flag is in a stand in the corner of the room behind the podium. The commander is standing behind the podium leafing through the paperwork as the interested parties file in and quietly take their positions. They stand at attention.

Cmdr: I have here the report of last night's ground accident of the C-54, with your statements. I'll tell you right now it was senseless, inexcusable, and should never have happened. None of you are new troops. No one can say and expect me to believe he didn't know better. These reports don't give the full story. They're too short and too cursory, and if we are going to prevent this from happening again at this base and everywhere else I want the facts. This is not a court martial. There isn't going to be any recording of this meeting, but we're going to be ruthless in second guessing everything which led up to the fiasco. Do I make myself clear?

Many voices: Yes, sir!

Cmdr: Curtail, you were the pilot and had returned from a test hop. It says here you had an unsafe nose gear light. Give me the details.

Pilot: Boss . . . er, colonel, when we entered the pattern and lowered the gear we got three greens and the pressure was up. During rollout the nose gear indicated unsafe so I had the flight mech hold the gear lever down, told the tower our trouble, asked for help, let the plane slow to a stop at the end of the runway, and waited until the crew chief (pointing to Whiz) inserted the pin and then taxied to the line and shut down.

Cmdr: What indications did you have?

Pilot: The gear handle was down, the nose gear indicator showed in-transit, the horn was blowing, and we had a red light in the handle.

Cmdr: Did you do anything to see why the light stayed on and the horn kept blowing?

Pilot: No, sir. I knew the pin had been inserted and what with the delay on the runway and the time to taxi in, we were so cold we were shaking. I couldn't believe it when someone called me last night and said the nose gear had collapsed two hours later.

Cmdr: Curtail, how long after shutdown will the pressure stay in the down lines sufficient to keep an unlocked gear from folding?

Pilot: I guess about . . .

Cmdr: Don't guess. How long?

Pilot: I don't know.

Cmdr: Well, you find out. Tell me everything there is to know and be prepared to give lectures to every C-54 pilot on the base on the entire landing gear system.

Pilot: Yes, sir.

Cmdr: (Looking at the Ops officer.) Make sure all C-54 pilots are scheduled for his lecture.

Cmdr: Whiz, just exactly what did you do?

Crew Chief: Colonel, when the tower called and said the plane was at the end of the runway needing gear pins I wondered why the flight mech didn't get out and put in the ones he had, but I picked up some pins and had Watchout drive me out to the runway. As soon as I put the nose gear pin in I gave the pilot the okay-to-taxi and got back in the truck.

Cmdr: How do you know the pin was installed right? Did you use a light?

Crew Chief: No, sir. There was enough from the runway lights reflecting off the snow

and from the headlights from the truck. I've pinned the gear many times in my eight years on C-54s, and the light was plenty good.

Cmdr: How do you know the pin was in right? The report says when the plane was jacked up the pin was found to be improperly installed.

Crew Chief: Colonel, I'm almost positive I put it in right. I don't think I could install it any way but right.

Cmdr: After you put the pin in did you double-check and ask the pilot if the horn was still blowing?

Crew Chief: No, sir. I gave him the okay-to-taxi and rode back to the shop. I assumed the flight mech would write it up and that someone in the shop would check out the system.

Cmdr: What do you mean, assumed? Why wouldn't you be the one to check it out? You put the pin in and knew there was some kind of trouble.

Crew Chief: Colonel, this is not an excuse but we in night shift were working on several planes and I thought the C-54 might have to be jacked. I knew we couldn't get the plane into the hangar until this morning. The doors were frozen and we couldn't get anything in or out last night.

Maint Off: That's right, sir. I've had people on the doors since 2200. If I may say so, sir, the first thing I'd have done on the gear discrepancy would have been to send some electricians to make sure the problem wasn't in the circuit before looking at the mechanical aspects.

Cmdr: That's all well and good with other conditions being satisfactory, but what in tarnation do you **need** to indicate trouble more than a warning light glaring at you and a horn blowing?

Silence

Cmdr: Well?

Maint Off: Colonel, we goofed on this one. We should have checked it out.

Cmdr: You see to it that Whiz writes up a complete operating instruction for any kind of gear warning — not only for the C-54 but all of our aircraft. I don't want any more gear collapsing on the line. Clear?

Maint Off: Yes, sir.

Cmdr: Now, what's the matter with you, Watchout?

Driver: I'm scared, colonel.

Cmdr: What's your story?

Driver: None, sir. I was driving real carefully, but maybe the truck went over a high piece of ice and slid me too close so that the UHF blade antenna cut the deicing boot and a fuel vent line. I didn't feel anything and didn't even know what had happened until a long time later when the chief told me.

Cmdr: How close to any aircraft can you legally drive a Follow-Me?

Driver: You mean in feet? I guess . . . I don't know.

Cmdr: What are you going to do to find out?

Driver: I'm going to find out and let everyone else know, sir.

Cmdr: What I've read and what I've heard this morning indicates inattention to detail. All of you know my interest in safety. When I walk out on the line or through the hangar and shops I like what I see, but I don't see any tangible evidence of a continuing safety education program. People aren't born safe. The story must be repeated time and again. I have some other thoughts which the chief of safety will be down to see you about later. Meanwhile, get today's assignments completed right away and, until further notice, I want a report at every weekly section meeting of what safety topics are being discussed within each of your sections. That's all.

What happens when the Round One becomes the Chief One? You can bet five that he almost busts one!

C.R. TERROR

THERE WAS A BIT OF GLEAM in the eyes of the Chief Charmer of Cyclic and Collective. Here it was, ten days before Christmas, and he'd just received an early Christmas present. "I'm the chief, I'm the chief," he warbled in an off-baritone. "Jingle bells, jingle bells, jingle, jingle, jang — The Detco's off on Christmas leave, and I'm the chief, by dang." With a swirl of arms and a near-miss heel click attempt, the Girthy One charged off in his waddling strut toward his BOQ room.

Behind him the local base rescue detachment commander was making one last swipe at the papers on his desk before heading south on two weeks leave. His mind was already on the snow-clad Bavarian slopes — and the ski bunnies. He was also trying valiantly to forget the two major problems hanging over his head between now and New Year's Day — C. R., who would be running the show here at the plush German base, and Mrs. Detco, who would be doing the same at the ski resort.

But back to our hero. There sat C. R., temporarily number one honcho of the LBR. At long last, the Rabelaisian Rotorist was at the helm, and couldn't wait for the first opportunity to prove the quality of his sorely-suppressed executive talents.

* * *

It has been a very busy year for the tiny chopper unit and C. R. was glad to see it near an end. His

normal duties as operations officer, stand/eval officer, supply officer, voting officer, plans officer, security officer, safety officer, retention officer, drug abuse officer, life support officer, and IG project officer had kept him occupied. Add to this the alert duty he'd pulled an average of three times a week, and then work in all those weekend trips to Paris, Copenhagen, Brussels, Geneva, Berlin, London, Munich, and Amsterdam. Yes, this *had* been a busy year. And he couldn't overlook the visiting firemen — there had been quite a few visitors to the detachment in the past twelve months too. Let's see; MSET, Command IG, ASET, USAF UEI, host base ORI, COMAC, two wing semi-annual management "staff assistance" visits, and a couple dozen or so other late summer (Olympic) VIP official visitors. No wonder El Bosso, who had lost leave for the past three years, was anxious to depart the local area as soon as it looked like the well-meaning harassers were at long last taking a vacation themselves.

C. R., the master mind that he was, labored long into the evening as he planned and programmed the next two weeks' activities with great skill and cunning. After all, he couldn't miss any of the three fighter squadrons' Christmas or New Year's parties, the teachers' vacation bash, or the O-Club's annual extravaganza, plus those several other pre-Christmas, post-Christmas, and pre-New Year's get-togethers. It took some finesse to work up the alert schedule so he could make each holiday celebration and yet not have to show up to cover an early morning fighter launch the next day. But with the boss gone, the other troops would just have to expect to pull a few back-to-back alerts and bend the old crew rest regs a little.

The next day was Friday, and C. R. shut himself in the Detco's now-vacant office while he perfected his yuletide ploy list. By the time he had posted his rosters, completed the weekend briefings, and closed up shop, happy hour was in full swing at the club. He skipped swiftly through the snow, eased through the double doors, and aimed his bulk at the first opening in the packed house. "Scuse me," he mumbled as he accidentally elbowed the remains of a half-done Mai Tai over the ample posterior of the wing exec. Then he continued through the wall of people toward the watering hole.

"I'll have a double martini, Joe — no better make that a triple!" he shouted when he finally made his way to the bar. Then, digging his pudgy paws into the padded bar front and using the six-inch foot rail to augment his diminutive stature, he turned to scout the room. The excitement of the approaching holiday season seemed to amplify the roaring bar room conversations, and a thicker than usual haze lay over the crowd. "Where are you, my li'l chickadee?" the Rotund Romancer asked of no one in particular, as he searched for that cute little school teacher he'd met the week before. Then his eyes caught a set of eagles moving his way — the base commander detached himself from a dull roar and bevy of formation-flying hands down the bar, and addressed the Caliph of Chopperdom.

"Hey, Terror!" the colonet shot, "What's the status of our Santa Claus airlift mission for Wednesday afternoon?"

"Sir, we're all set down at the detachment. But as of yet I haven't seen approval from the head shed. Ya' know the wing DO sent the request to USAFE a couple of weeks ago but it wasn't quite the 30 days advance they request."

"Better check it out on Monday, Terror; wouldn't want to disappoint the kiddies or the wives' club. Those gals will kick up a lot of sand if good old Saint Nick doesn't arrive at the kids' party by a chopper."

"Yes sir," responded a less-than-enthused C. R.

* * *

Word finally trickled down Tuesday that the mission was approved, and as C. R. pried his eyes open on Wednesday morning he was greeted by an overall gray, leaden day — and two inches of new snow on the ground. Actually, it was Wednesday noon — the Clown Prince of the Eifel had made an all-night affair out of the bachelor teacher's party in the Q room down the hall and had slept late. As he glanced in the mirror he noticed that his face had a very seasonal tone — red of eye and green of gill. Then he lurched through the shower-shave-and-such drill, decked himself in green pajamas, violet scarf, and emerald green pigskin gloves, and presented his quivering carcass at ops just at the stroke of one. The Santa mission takeoff was a scant 30 minutes away, but his trusty left seater, Hamhand Harry, had all the squares filled.

"Ugh," greeted C. R., an odor of used juniper berries spewing forth to embrace Harry. "All set?"

"Ho, ho, ho," chimed his ace assistant. "The chief elf has been hard at work while —"

"Ah, shuddup," grumped C. R. "Let's get this fiasco over with so I can rest up for tonight."

"Yessir," offered a slightly chagrined Harry. He handed the Great One the proof of his extensive labors for this ten-minute mission — the completed weather sheet, TOLD card, ARRS Form 56b, MAC Form 41, USAFE Form 249, and even a proper DD Form 365F (for the Jolly One's toy bag).

Mumbling his thanks, the Gross

One stumbled into the lounge where Santa waited, did a double-take at the vision of his apparent twin, and began the crew and passenger briefing. He reminded the red-suiter to depart the chopper directly to the front and to hold tight to his beard, toy bag, and hat so they wouldn't blow away in the rotor wash. He mentioned that the flight would take a whole ten minutes from liftoff at the chopper pad to landing on the service club lawn and return to the chopper ramp, and that standard procedures would apply. "End of briefing," summed the World's Greatest as he turned and headed out.

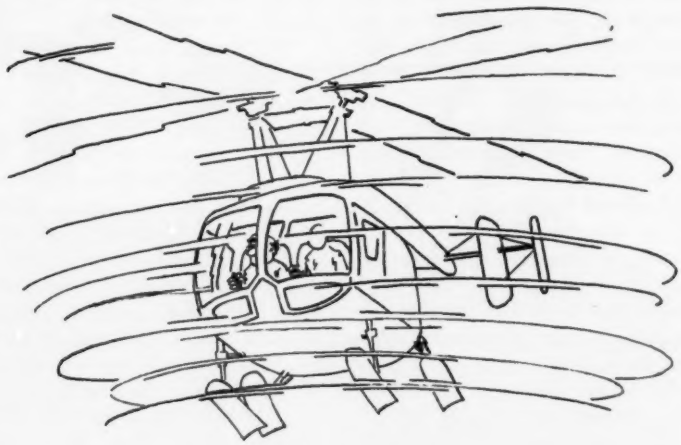
The subfreezing briskness of the day had a revitalizing effect on C. R., and by the time the big blades began tracing circles over his head he was regaining some of his normal humor. "Great privilege, ain't it, Harry?" he enthused through the intercom. "Let's go bring a little happiness to all those little curtain climbers." With this, he hauled in a healthy handful of collective and horsed the Huskie up from the freshly-swept ramp.

As soon as he cleared the guy wires for the antenna farm he got an idea. "Harry, turn on the loud hailers," he ordered. "Might just as well add a few sound effects."

"Rog, chief," replied Harry as he flipped the switch on the center console.

C. R. levelled the bird a couple of hundred feet above the line of fighter revetments and turned to start his pass over the Service Club. He could see the spectators pointing in his direction as he keyed the mike and bellowed, "Ho, ho, ho. Ho, *ho*, ho-ho." The flurry of wildly-waving arms egged him on, and he began a crackly chorus of "Here comes Santa Claus," accompanied by slow waltzing gyrations of the chopper. The Great One had center stage and was relishing every bit of it.

He was interrupted by Santa, who leaned up to tap C. R. on the arm and pantomined a bit of airsickness. C. R. gave him a swift thumbs-up, called for the before landing checklist, and lowered collective for his descending turn to final. His aiming point was on an imaginary line running across the white expanse between crowd to Service Club, and he carefully hauled the chopper into



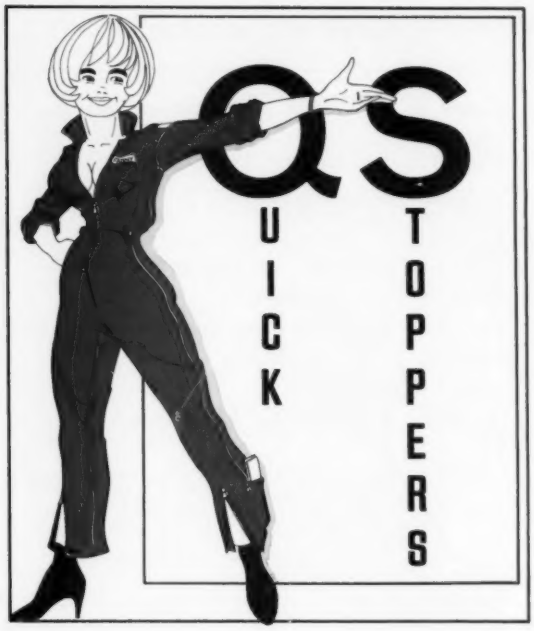
a pre-landing hover somewhere above the completely detail-free white surface. C. R.'s bloodshot eyes were straining to pick up some clue to depth perception just as the rotorwash violently agitated the layer of new fluff. Finding himself suddenly in the midst of a man-made whiteout, C. R. did what any self-respecting rotor jock would do — he fought off panic while adding all the collective the little craft would endure.

His bleary eyes swept to the instrument panel to find some indication of the chopper's attitude and movement, and he swiftly deduced that the bird had entered a tight right turn. He threw in heavy left cyclic just as a sharp thud told him he'd hit something, and then craft and crew were abruptly in the clear again. Off on his left he could see the crowd ducking the sudden blizzard — and somehow he noticed the base commander very carefully slamming his hat onto the ground.

In two minutes C. R. was back on the ramp, and a fire truck was on its way to carry Santa and sack back to where they had almost been. C. R. slumped in his seat as the rotors wound down, and wondered how he'd explain all this to his vacationing boss.

Then Harry cut into his thoughts. "Cheer up, chief. The bear paw that hit the ground is okay, and Santa didn't get sick until he got out. Besides, I saw the photographer from Stars and Stripes accidentally smash his camera while he was trying to get out of the way. We got off clean as a whistle."

C. R. shook his head sadly. "That's what *you* think. Look who's coming our way with no hat and steam pouring out of his ears." Then, prying his face into a sickly grin, he stepped out to greet the base commander.



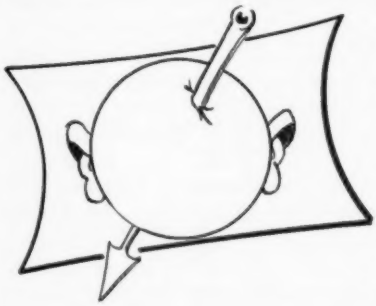
Give to the Needy

THE MAC FLYER needs Christmas gifts. They can be in any size or shape — just so long as they're typed and double spaced. You guessed it. We need your help in putting some *umph* in our monthly mag. Pick out a subject — anything that turns you on. Write an article, proof it a couple of times, type it, and slip it in an envelope. Mail it to MAC/IGYE/Stop 114, Flying Safety Writing Contest, Scott AFB, IL 62225.

If received with a postmark of 31 March or before, your effort will qualify as an official contest entry and will be considered for publication in THE MAC FLYER. Any articles postmarked after 31 March will also be considered for publication but will not be eligible for the contest. The awards: First through third place, walnut desk sets; honorable mention winners, pen and pencil sets.

Please be charitable during the holiday season—be generous; giving is more honorable than receiving. Help the needy — THE MAC FLYER.

Needle, Ball, and Ears



A pilot looks to the side of the cockpit, lowers his head to adjust a light switch, and snaps his head back with the sudden conviction that he is in a screaming dive. At least he thinks he is — a closer look at the attitude indicator shows that he is still straight and level.

This ever happen to you? It's a real strain trying to recover from straight and level and get your head to agree with the gages. Call it vertigo, spatial disorientation, or whatever, it is a problem to be concerned with.

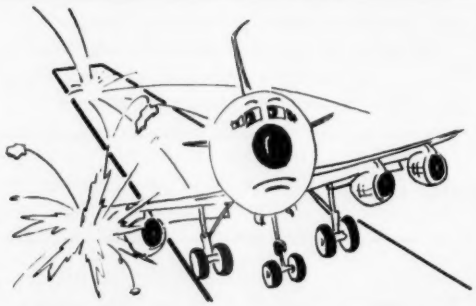
Spatial disorientation can be caused by a number of things — and trying to fly with your head in a non-normal position is one of the prime triggers. You can induce the problem by fishing for a dropped approach plate or pencil, or by performing an eyes-closed valsalva during a turn. Aircraft designers also get into the act — there are cases where system design or a switch location force you to assume a position that may cause spatial disorientation. Any aircraft where the right-seater has to use instruments on the left side of the panel can cause spatial disorientation, as a major accident in another command just proved. And we can think of one MAC aircraft that is configured to mess up the pilot—T-39 with the radar modification. The radio controls were relocated in such a manner that the trim and exhaust total pressure gages are wholly obscured. Consequently, you have to bend way over the throttle quadrant to make power adjustments or read trim settings. If this isn't asking for trouble we don't know what is.

The next time you strap yourself to your aluminum bullet, look around. See what things could put you in a trouble-causing position, and be aware of them. After the mission, talk to your friendly safety officer and see if you can submit a hazard report on the situation. All you have to lose is your spatial disorientation.

Effective Housekeeping

Remember our Quick Stopper entitled "Fable-ous Loss?" The one about two tiny rivets wiping out two C-5 engines? Well. "Fable-ous Loss" also applies to chopper engines. A TH-1F helicopter pilot recently had to make an emergency landing when the chopper engine started to lose power. Teardown of the ailing petrol converter found the cause: a large rivet head had damaged the turbine guide vane ring. The rivet was the kind used to secure a stress panel, and engine records showed that a stress panel had been removed a month earlier and then replaced. No other sheet metal or panel work had been performed since then. The cause: poor maintenance housekeeping practices.

Touch-and-Gone



Touch-and-go landings are real timesavers in our training programs, but things can get exciting real fast if something major goes wrong. A KC-135 driver found this out when a touch-and-go landing turned into a hairy handful. Immediately after rotation, the number four engine on his bird exploded. (On a C-141 this can cause concern; in the '135 you face a real bear when an outboard is lost on takeoff.) Now airborne, the IP in the right seat applied full left rudder and left aileron, but couldn't keep the bird from veering to the right. The aircraft touched on a taxiway to the right of the runway and then continued off into the grass past the end of the runway. The pilots shut down the engines, pulled the fire switches, and left the now-flaming bird to the attention of the red-truck troops. The quick reacting fire department had the fire under control in less than five minutes.

Question: Do you start to relax as soon as the gear hits the runway and the throttles go forward? If you do, keep reading THE MAC FLYER — your hairy experiences will appear here sooner or later.

The Cold Within

Six humans trapped by happenstance
In bleak and bitter cold;
Each one possessed a stick of wood,
Or so the story's told.

Their fire would die without more fuel.
The first man held his back —
For of the faces round the fire
He noticed one was black.

The next man, looking 'cross the way,
Saw one not of his church
And couldn't bring himself to give
The fire his stick of birch.

The third one sat in tattered clothes.
He gave his coat a hitch.
Why should his log be put to use
To warm the idle rich?

The rich man just sat back and thought
Of the wealth he had in store
And how to keep all that he had
From the lazy, shiftless poor.

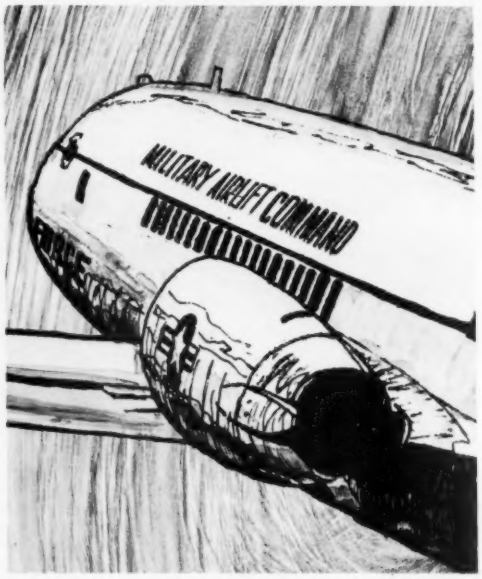
The black man's face bespoke revenge
As the fire passed from his sight.
For all he saw in his stick of wood
Was a chance to spite the white.

The last man in this forlorn group
Did nought except for gain,
And giving just to those who gave
Was how he played the game.

Their logs held tight in death-stilled hands
Were proof of human sin.
They didn't die from the cold without;
They died from the cold within.

James Patrick Kinney
Ubon RTAFB, Thailand
(From McGuire Airtides)

Rocks in the Brain



Last month we discussed methods to avoid wake turbulence. As you can imagine, not everyone got the word. Because we haven't heard of a MAC case which would serve as an example, we'll borrow an experience from our commercial brothers for emphasis. An airline-type pilot requested an intersection takeoff so that he could depart ahead of two C-5s which were waiting eagerly to depart. The intersection he requested cut 6,000 feet off of the useable runway — and the tower disapproved the request. So the disappointed pilot trundled his machine down the taxiway to number three position.

Less than two minutes after the second C-5 rolled, the same pilot requested takeoff clearance and stated that he knew where the turbulence was. Tower advised him that minimum separation for his type aircraft was four minutes, and that he would be released when the time was up.

Both the intersection takeoff and the immediate departure after the C-5 would have been highly dangerous maneuvers. Current rules pretty well take care of the former. For those inclined to press close behind, we invite you to read "Those Man-Made Rocks in the Sky" in last month's magazine. If your unit does not have a copy, contact your wing safety officer, get a copy, and read it. It may save you a few bumps.

Help put me under a tree. Give The MAC Flyer for Christmas.

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INDUCTION ICING -- For those who missed "Why Induce Disaster?" in our November issue, here's a reminder that inlet icing can accumulate any time you have near-freezing temps, visible moisture, and sustained low power settings while you're sitting around waiting for a clearance. Recently a T-39 crew sat for an hour and 15 minutes with engines running waiting for a heavy ground fog to lift so they could take off. Finally, they gave up and groped their way back to the ramp. To their surprise, the crew chief reported both engine inlets were partially blocked with ice; the largest loose piece was six inches by four inches. Their takeoff would have been disastrous.

SAVE THOSE EYES -- One of our stalwart crewmen recently checked in at sick call with an eye infection. The Doc disagreed, diagnosing the problem as a scratched eyeball. Then our stalwart crewmember remembered pulling off his issue sunglasses and having the springy bows snap across his face. When he examined the glasses, he found the brass wire running through the temple piece had a sharp edge. He solved the problem by filing the end flush with the plastic.

INCREASED PRICES -- We just received notice from The Superintendent of Documents, U. S. Government Printing Office, that the annual Flyer subscription will increase after 1 January 1973. If your subscription is received by the GPO before 1 Jan, the rates will be as printed on page 29. Any subscription received after 1 Jan will be $3.50 for stateside mailings and $4.50 for overseas. Increased postal cost is the reason.

OOPS AND BOO-BOOS -- In the October autopilot article (pp 26-27) we insinuated the C-141 autopilot did not have access to all three gyros, but it does. The problem sentence should have read: "Since the autopilot <u>also</u> uses gyro number three, it can be used as a double check should either of the pilots' ADI gyros fail."

COMING ATTRACTIONS -- January is a traditional time for resolutions, and in the spirit of the season we resolve to bring you 32 pages of good reading. Although some of our planned articles are still up in the air, we do know there will be two features on corrosion, a how-to-do-it for prospective writers, C. R. Terror, and the regular departments.

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